REHABILITATION MEDICINE Adding Life to Years

Pain Centers—Organization and Outcome

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Pain treatment centers have evolved at a rapid rate, but they differ in their complexity and services provided. Patients, as well as primary care physicians, have difficulty in identifying the appropriate center for a specific problem. Guidelines for pain centers have recently been proposed by the International Association for the Study of Pain, along with an attempt at their accreditation. Outcome studies from pain centers have proliferated, with a wide range of treatment programs being reported. Comprehensive multidisciplinary pain centers using the rehabilitation medicine approach are effective in decreasing disability and increasing the productivity of patients with chronic, disabling pain.

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Primary care physicians frequently see patients whose primary symptom is pain. Evaluating and managing acute pain is an inherent part of every physician's training. Acute pain is a biologically useful warning that provides physicians clues for diagnosis and treatment. With the appropriate control of the underlying pathologic process, pain subsides and resolves, having served a meaningful and useful function.

Frequently patients have pain that lasts beyond the expected duration of healing for a particular injury or illness. In many situations, either no disease can be identified to explain the degree of symptoms or, despite adequate medical and surgical treatment of the identified disorder, pain persists. Patients with chronic and persistent pain tend to challenge the clinical acumen of physicians and frustrate physicians and the health care system. Managing chronic pain, therefore, becomes a challenge not only to the patients but to physicians and society as well.

Acute Versus Chronic Pain

Pain is a complex and puzzling human experience that defies a uniform definition, explanation, or measurement.[1-3] Acute pain can be defined as an unpleasant sensory, perceptual, emotional, and mental experience with associated autonomic, psychological, and behavioral responses provoked by acute disease or injury.[4,5] All pain phenomena include a psychophysiologic experience involving not only nociception, the perception of noxious stimuli, but also the interpretation of those sensations as painful, the evaluation of pain as creating suffering, and antalgic behavior—overt expressions or communication of pain, including posture, grimacing, verbal complaints, avoidance, and the use of assistive devices such as transcutaneous electrical nerve stimulation (TENS), canes, and wheelchairs.[6]

Acute pain serves a biologic function and is useful to both patients and physicians. It subsides and resolves after the underlying pathologic process is adequately treated through medical, surgical, or physical means.

In contrast, chronic pain is persistent and lasts beyond the normal healing period. Chronic pain begins originally as acute pain, often with a typical injury, inflammation, or surgical incision. It differs from acute pain in etiology, mechanisms, pathophysiology, diagnosis, and treatment.[1-6] Chronic pain is not adequately relieved with somatic medical or surgical therapies. Psychological changes in these patients do not seem to respond to traditional psychiatric techniques.[2,6]

More than 70 million persons have chronic pain.[1,2,4] Bonica estimates that 700 million workdays are lost and that the total cost of health care approximates $60 billion annually.[4] A patient with chronic pain is typically in the prime of life, has a history of work-related injury, and has several of the following *D*'s:

- Dramatic pain behaviors;
- Dysfunction demonstrated by badges, collars, braces, or canes;
- Drug misuse;
- Dependency on family and society;
- Deconditioning;
- Disuse of an extremity;
- Depression characterized by sleep disturbances, low energy level, hopelessness, and decreased self-esteem; and
- Disability that far exceeds the underlying biomedical findings.[1-3]

Table 1 summarizes the features seen in persons with chronic pain.[6]

Managing Chronic Pain

The most notable advance in the management of chronic pain is the recognition of psychological and behavioral factors affecting patients.[1,3,5] In the past three decades the management of chronic pain has not only been recognized as different from but uses principles exactly the opposite of those used in acute pain (Table 2). Although the basic tenets of acute pain management include rest, symptomatic relief through medications, avoiding stressful situations, and attention to pain, chronic pain management involves reconditioning, avoiding symptomatic medication therapy for pain, focusing back to a more useful productive role, and avoiding attention to pain behaviors.[1,2,6]

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ABBREVIATIONS USED IN TEXT

IASP = International Association for the Study of Pain
TENS = transcutaneous electrical nerve stimulation

An important step in the treatment of chronic pain is differentiating it from acute pain. This is followed by appropriate counseling of patients and families. Elsewhere we have described guidelines for counseling patients with chronic pain using the "Milwaukee" approach.[7] The following features need to be recognized and accepted by physicians treating patients who have chronic pain:

- The multidimensional nature of pain with sensory, cognitive, behavioral, and environmental factors;
- The biopsychosocial features of chronic pain;
- The differences between acute and chronic pain;
- Life-style changes seen in patients with chronic pain—drug misuse, dysfunction, depression, disability;
- The role of central and peripheral mechanisms in modifying pain;
- Differences in management between acute and chronic pain;
- Role of work, family, and society in patients' pain.

Results of Chronic Pain Treatment Programs

A number of studies have reported results of chronic pain treatment programs. Swanson and co-workers, in a study of 50 inpatients, concluded that half the patients who completed the program were able to return home and increase their work-related activity without taking more drugs or returning to the pattern of frequent visits to physicians and repeated hospital admissions.[8] Seres and Newman, in a study involving operant conditioning, spousal participation, exercise, biofeedback therapy, relaxation therapy, education, the use of TENS, and psychotherapy, reported a reduction in medication, increased activity levels, and a decrease in pain behaviors.[9]

Vasudevan and co-workers, in a study of 78 patients in an outpatient program, concluded that an outpatient program may be cost-effective, but for patients with significant medication dependence, excessive pain behaviors, and residing a long distance from the treatment facility, a structured inpatient rehabilitation program may be required.[10] Järvikoski and colleagues also emphasized that outpatient treatment is suitable for patients with less distress whereas inpatient programs may be needed for those with serious psychosocial distress and those who require a more structured environment.[11]

TABLE 1.—*Common Features of Patients With Chronic Pain**

Have pain of several months' or years' duration
Have pain similar to the initial pain that is associated with a medical problem or injury
History of many treatment failures provided in great detail
Many medications tried, with minimal to poor response
Continuous use of analgesics and tranquilizers, despite patients' testimony that the medications offer no notable or long-lasting relief
Pain described as being unbearable and incapacitating
Strong belief that pain has an unidentified organic cause
Desire and willingness expressed to undergo "any treatment" for pain relief
Claim that everything will be fine if only the "doctor would treat my pain"
Pain not relieved by any medical or surgical treatment
Substantial psychosocial changes present, especially depression, although patients vehemently deny the label; they frequently do admit to feeling frustrated, angry, and irritable, with disturbed sleep, altered moods, weight changes, decreased energy, decreased physical, social and recreational, and sexual activities, and increased family stresses and economic difficulties

*From Gildenberg and DeVaul.[6]

TABLE 2.—*Principles of Management of Chronic Pain*

Cessation of narcotic intake—eliminate potentially addicting narcotics, tranquilizers, and other medications
Encourage an increase in activity levels; graded exercises are provided with education in differentiating "hurt" from "harm"
Avoid use of passive modalities such as heat, massage, or traction; instead, use electrical stimulation such as TENS, biofeedback-assisted relaxation exercises, and sympathetic and epidural blockade
Psychological and cognitive behavioral intervention with group therapy provide insight and operant conditioning principles to shape healthy behaviors
Return patients to meaningful roles, either to work when possible or to more productive life-style

TENS = transcutaneous electrical nerve stimulation

Guck and associates reported the findings of a survey comparing treatment with nontreatment control groups.[12] Considerably more treated patients than untreated patients were employed at follow-up. In addition, treated patients reported less pain-related interference with work, household chores, recreational activities, sexual relationships, physical exercise, and the ability to sleep than did the untreated group. Similarly, the treated group was admitted to hospital significantly less often at follow-up than was the untreated group. Fewer treated than nontreated patients were using prescription narcotics and psychotropic medications after treatment.[12]

Stieg recently discussed the problems in defining cost-effectiveness in this age of ever-increasing accountability.[13] Of all the pain centers in the United States recently listed in a published directory, less than 5% were accredited by either the Joint Commission on Accreditation of Health Care Organizations or the Commission on Accreditation of Rehabilitation Facilities. Stieg also identifies the problems in comparing pain centers in that many dedicated pain treatment centers have no professional staff who belong to any of the scientific organizations that serve the pain population.[13]

Outcome studies are confounded by the fact that patients with chronic pain seem to be treated as a homogeneous group with generic treatments. Turk attempts to classify the subgroups of patients with chronic pain along with suggesting possibly customizing the therapeutic intervention to a patient's characteristics.[14] Thus, future outcome studies need to address these subgroups of chronic pain and require prospective cost-effective research matching the treatment with patients' characteristics.

Pain Centers

Since the original concept of multidisciplinary pain centers evolved in the early 1960s, there has been a notable proliferation of facilities that evaluate and manage pain. This development has occurred worldwide but predominantly in the United States. The International Association for the Study of Pain (IASP) recently published the results of a task force on guidelines for the desirable characteristics for pain treatment facilities.[15]

Pain centers vary in their complexity of setting, staffing,

and costs. Some are unimodality clinics, and others are comprehensive treatment and research facilities. One way to classify pain centers is by their approach to treatment—whether they use a pathophysiologic, psychiatric-psychological, or rehabilitation model.

Pathophysiologic treatment facilities use treatment approaches directed at a peripheral nociceptive disorder. Many "nerve block clinics" would fall into this category. Such programs address acute pain and postoperative pain and some selective phases of chronic pain. The approach is intended to reverse a pathophysiologic process, however, and does not address the complexity of the chronic pain phenomenon discussed earlier.

The psychiatrically or psychologically oriented approach views pain as an expression of underlying psychological conflict and distress. Patients are given appropriate psychotropic medication and long-term counseling. Patients with chronic pain would not be candidates for a treatment facility using such an approach.

The rehabilitation model of pain treatment facility addresses not only the medical but the physical, psychological, social, vocational, and economic aspects of patients with pain-related disability and their families. The goal is to improve patients' function, decrease dependency on health care personnel, increase physical activities, and return patients to their "usual" roles.

There is no uniform method of accreditation or certification of pain facilities. Pain facilities may obtain voluntary certification from the Commission on Accreditation of Rehabilitation Facilities,[16] but this commission provides standards only for the rehabilitation model of chronic pain facilities. Because of the lack of accreditation, pain management has been viewed with skepticism by physicians and health policy and funding administrators, thus prompting the IASP to provide reasonable guidelines for pain treatment facilities.[15]

The IASP guidelines identify the following desirable characteristics of pain centers[15]:

- A multidisciplinary pain center is an organization of health care professionals and basic scientists that includes research, teaching, and patient care related to acute and chronic pain. The clinical programs need to be supervised by an appropriately trained and licensed clinical director with a wide array of health care specialists such as physicians, psychologists, nurses, physical therapists, occupational therapists, vocational counselors, social workers, and other specialized health care providers. These centers are affiliated with major health sciences institutions and provide evaluation and inpatient and outpatient programs.
- A multidisciplinary pain clinic is a "health care delivery facility staffed by physicians of different specialties and other nonphysician health care providers who specialize in the diagnosis and management of patients with chronic pain."[15] This differs from the multidisciplinary pain center in that it does not include research and teaching activities in its regular programs. The services may be provided on an outpatient or inpatient basis, or both.
- A pain clinic is a "health care delivery facility focusing upon diagnosis and management of patients with chronic pain."[15] A pain clinic may specialize in specific diagnoses or pain related to a specific region of the body. The IASP guidelines strongly emphasize that this label should not be used for a solo practitioner. In such a program, interdisciplinary assessment and management are absent.
- A modality-oriented clinic is a "health care facility which offers a specific type of treatment and does not provide comprehensive assessment or management."[15] Examples suggested are nerve block clinics, TENS clinics, acupuncture clinics, or biofeedback clinics.[15] Again, the major emphasis is the lack of an integrated, comprehensive interdisciplinary approach.

TABLE 3.—*Choosing a Pain Treatment Facility*

Does the pain treatment facility provide a comprehensive range of programs: evaluation only, inpatient, full-day outpatient, individualized program?
Is there an identified medical director who has obtained recognized board certification and training in pain management?
Does the medical director belong to a nationally recognized pain organization and attend meetings of these organizations?
Does the facility have a variety of other health care professionals? At the minimum, are there psychologists, nurses, physical therapists, and occupational therapists, and are different medical specialists available for consultation?
Does the facility have a mechanism for interdisciplinary communication through team conferences?
Is there sufficient space for the activities of the program either on premises or through an affiliation?
Does the facility deal with a wide variety of chronic pain patients or is it limited to only specific diagnoses?
Is the center involved in research activities, and does it make the results of its program available?
Does the facility participate in educational programs for the community at a variety of levels?
Is the facility affiliated with a major health research facility, tertiary facility, or university?
Does it offer a variety of treatment approaches, such as detoxification, pharmacotherapy, physical conditioning, and psychological counseling?
Does the facility have a follow-up program?
Is there a support group for graduates of the program?
Is the facility accredited by nationally recognized organizations?

The IASP task force strongly emphasizes the need for a multidisciplinary approach to the diagnosis and treatment of patients with chronic pain. Although not every patient referred to such a facility would need all the services, these guidelines encourage the facilities to have the resources available when they become appropriate. In addition, health care professionals in pain treatment facilities are encouraged and expected to become members of IASP and its national chapters to facilitate the exchange of information and research activities.

Examples of questions physicians (and patients) may wish to consider in choosing a pain treatment facility are given in Table 3.

Conclusions

The rehabilitation of patients with chronic pain requires that primary care physicians understand and recognize the pluridimensional nature of pain. Outcome studies from chronic pain programs have shown substantial improvement in the functional status of patients and decreased disability. Pain treatment facilities vary in their comprehensiveness, and primary care physicians need to recognize the mechanisms for identifying an appropriate treatment facility for their patients with chronic pain. Physicians should be able to recognize chronic pain, communicate and counsel patients and their families appropriately in establishing realistic

goals, and use the resources of the pain treatment facilities in the community to decrease disability and improve the quality of life of these patients.

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A QUADRIPLEGIC'S NIGHTMARE

I speed past the others,
an eagle in flight.
I break through the ribbon,
and conquer the night.

My legs become heavy,
arms fall to my side.
I question my future,
cannot stay on this ride.

I open my eyes,
and my body is gone,
lost by my carelessness,
now it is dawn.

I have little left,
what's here's hard to find,
will I discharge the rest
and give up my mind?

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